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PN - JP63259051 A 19881026  
 PD - 1988-10-26  
 PR - JP19870091444 19870414  
 OPD - 1987-04-14  
 TI - HIGH TOUGHNESS STEEL FOR ELECTRIC RESISTANCE WELDED STEEL TUBE HAVING EXCELLENT SOUR RESISTANCE  
 IN - HAGA HIROTSUGU; HASEGAWA HIROSHI  
 PA - NIPPON STEEL CORP  
 IC - C22C38/00 ; C22C38/12 ; C22C38/14 ; C22C38/58  
 CT - JP58084958 A [ ]

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TI - Steel for high toughness electric welded steel tube - comprises carbon, silicon, manganese, calcium, tantalum and/or hafnium, aluminium, phosphorus, sulphur and Iron  
 PR - JP19870091444 19870414  
 PN - JP63259051 A 19881026 DW 198849 013pp  
 - JP3066385B B 19911017 DW 199146 000pp  
 PA - (YAWA ) NIPPON STEEL CORP  
 IC - C22C38/12  
 AB - J63259051 Steel comprises (by wt.) 0.01-0.35% C, 0.02-0.5% Si, 0.1-1.8% Mn, 0.001-0.008% Ca, 0.001-1.0% Ta and/or Hf, up to 0.05% Al, 0.015% P, and 0.003% S, and Fe and impurities, and 50% or over inclusion of the steel contains oxide of Ta, and Hf.  
 - USE - The steel exhibits no cracking due to hydrogen blister in harsh environment such as in excavation, transport and storage of oil and natural gas, where low pH prevails. ( 0/0)  
 OPD - 1987-04-14  
 AN - 1988-348894 [49]

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 TI - HIGH TOUGHNESS STEEL FOR ELECTRIC RESISTANCE WELDED STEEL TUBE HAVING EXCELLENT SOUR RESISTANCE  
 AB - PURPOSE: To improve the sour resistance of the surrounding part of the weld zone where the electric resistance welding is performed by incorporating specific ratios of Ta and Hf into the titled steel having specific compsn. and regulating the contents of Al, P and S.  
 - CONSTITUTION: The compsn. of the steel for electric resistance welded steel tube contg., by weight, 0.01-0.35% C, 0.02-0.5% Si, 0.1-1.8% Mn and 0.001-0.008% Ca, contg. total 0.001-1.0% of one or two kinds of Ta and Hf, regulated with  $\leq 0.05\%$  Al,  $\leq 0.015\%$  P and  $\leq 0.003\%$  S and consisting of the balance Fe with inevitable impurities is formed. Said steel is refined in such a manner that  $\geq 50\%$  inclusions in the steel contain the oxides of Ta and Hf. The optimum amt. of one or more kinds among Cu, Ni and Cr, one or more kinds among Mo, V and Nb and one or more kinds of Ti and Zr is incorporated into said steel at need. By this compsn., the sour resistance and low temp. toughness of the steel can be improved.  
 I - C22C38/12 ; C22C38/00 ; C22C38/14 ; C22C38/58

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